Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: April Palmie
Superfund Section
Remediation Division

Date: July 30, 2012

From: Joseph "Kip" Haney, M.S.
Toxicology Division

Subject: Toxicology Division Review of the
Draft Baseline Human Health Risk Assessment Report (July 2012) for the
Patrick's Bayou Federal Superfund Site, Deer Park, Harris County, Texas.

Staff of the Toxicology Division (TD) reviewed the July 2012 draft Baseline Human Health Risk Assessment (draft BHHRA) for the Patrick's Bayou Federal Superfund Site located in Deer Park, Texas. To the extent possible, TD reviewed the draft BHHRA to ensure compliance with the Texas Risk Reduction Program (TRRP) rule (30 TAC §350) and applicable TRRP guidance (e.g., TRRP-24). Although TD comments have attempted to promote consistency with TCEQ methodology and conservativeness in the face of uncertainty to err on the side of health protection, it is important to note that since USEPA conducts risk assessments (i.e., evaluates the acceptability of health risks/hazards posed by contaminants) under different guidance than TCEQ, often using different receptors and/or exposure parameters than TRRP, conclusions of the draft BLRA may differ from those which would be reached under TRRP. In the review, TD focused on highlighting any such differences for the TCEQ project manager. The section headings below correspond to those contained in the draft BHHRA, and are followed by TD comments.

Executive Summary

TD Comment: Public health assessments conducted by the Texas Department of State Health Services (formerly TDH) are irrelevant to the appropriate evaluation of sites under TCEQ rules (e.g., TRRP) and guidance.

Table 5-1 and 5-2

TD Comment: While TD notes that the individual-chemical and cumulative risks/hazards calculated for the receptors evaluated in the draft BHHRA are acceptable under TRRP, 60 days per year was not used as the exposure frequency for the construction worker per the May 2011 responses to comments (e.g., 20 days per year was used for the RME in Table 5-1). However, review of the risk/hazard results (e.g., Table 7-1 and 7-3 RME results) indicates that the conclusions of the draft BHHRA for this receptor would not change.

Table 5-4

TD Comment: Although TD notes that some of the sediment exposure point concentrations in Table 5-4 exceed TRRP sediment PCLs for recreational receptors (e.g., total PCBs exceed the sediment PCL of 2.3 mg/kg, total cPAH as compared to the BaP sediment PCL of 1.6 mg/kg), USEPA indicates that access is restricted such that regular recreational/trespasser exposure to sediment and surface water is highly unlikely. More specifically, the draft BHHRA indicates, "the entire shoreline of the Patrick Bayou Site is lined by three major industrial properties: Lubrizol, OxyVinyls, and Shell. For safety reasons, the industries located along the shoreline of Patrick Bayou restrict public access 24 hours a day, 7 days a week, and require escorts while on-Site. There are also several above ground industrial pipelines and a bridge crossing the bayou near the north entrance at the Houston Ship Channel (HSC) that effectively restrict access by boat…In addition, security controls are in place that restricts public access to the HSC and the Site by boat…The Captain of the Port of Houston-Galveston has established security zones for certain areas within the Houston-Galveston area, which includes the portion of the HSC where Patrick Bayou enters. The security zones exclude recreational/unauthorized vessels from this area on a round-the-clock basis…Because, public access to the shoreline is restricted by the bordering industrial facilities the potential for exposure to Site contaminants in the sediment is low…there is little or no potential for humans to be exposed to any contaminants which might be in the surface water…access to Patrick Bayou is not possible for purposes of recreational activities." Additionally, Patrick's Bayou (and the HSC) does not appear to be designated for contact recreation use in 30 TAC §307.10 (Appendix A).

Conceptual Site Model

TD Comment: Although the May 2011 responses to comments indicated that a groundwater report on upgradient areas outside the site boundary was in progress that would be used to modify the BHHRA as appropriate, no mention is made in the draft BHHRA.

Off-Site Recreational Fishermen Exposure

TD Comment: TD has concerns about the ability to evaluate the contribution of Patrick's Bayou contaminants to recreational-sized fish caught 1.6 miles off-site (e.g., at San Jacinto Monument Park) and the associated uncertainty. The draft BHHRA found no observable incremental contribution of D/Fs or PCBs to tissue concentrations at San Jacinto Monument Park, thus no risk characterization was performed in the draft BHHRA for fish/shellfish ingestion. Appendix A-2 of the draft BHHRA contains fish/shellfish tissue data for Patrick's Bayou. Although no summary statistics are provided in the draft BHHRA and the tables in Appendix A-2 are difficult to read as chemical names are only shown on the first few pages, fish tissue concentrations calculated to be protective of human health through consumption under TRRP-24 (e.g., dioxin fish tissue RBEL) appear to be exceeded by the D/F and/or PCB TEQ for all samples (some apparently > 100-fold higher). Thus, while Patrick Bayou contributions to fish at San Jacinto Monument Park over a mile away may not be discernible

as evaluated in the draft BHHRA, based on site-specific tissue data any fish/shellfish from the site caught by a recreational fisher at another location are likely to have tissue concentrations exceeding the fish tissue RBEL under TRRP.

Table 6-1

TD Comment: Although this table indicates the new USEPA RfD for dioxins was used, Section 6.4 indicates that the ATSDR chronic oral minimal risk level was used.

Table 5-3, 7-1, and 7-2

TD Comment: These tables of the draft BHHRA contain a dermal absorption factor of 0.03 for the PBC TEQ, which is inconsistent with the previous response to comments on the Work Plan. However, it does not appear that using a value of 0.14 would change the conclusions of the draft BHHRA.

Surface Water Exposure for Utility/Construction Worker

TD Comment: This section indicates that the brackish nature of the water results in a lack of incidental ingestion of surface water. However, as incidental ingestion is not intentional, this is not necessarily the case.

If you have any questions regarding this evaluation, please call me at (512) 239-5691.

cc: Toxicology Division (via e-mail), Board, Remediation File